

LINEAR POLARIZATION RESISTANCE (LPR) PROBES



LPR Technique & Configuration

The LPR technique allows the calculation of corrosion rate between anodic and cathodic half-cells where the connecting medium (the solution) is conductive. Measurements are made by applying a small voltage, usually between 10 and 30 millivolts, to a corroding metal electrode and measuring the resulting current flow. The ratio of voltage to current - the polarisation resistance - is inversely proportional to the corrosion rate.

Axess manufacture a range of specialised probes for LPR monitoring in either flush or projecting electrode form with either 2 or 3 electrodes. Flush electrodes are either set in epoxy resin or glass according to service. The ability of glass sealing to withstand difficult process conditions is offset by a reduction in electrode surface area.

READ DIRECTLY WITH
HHU OR DATALOG

WIRED, WIRELESS OR
CELLULAR COMMS

NPT, 1" INSERTS AND 2"
HP FITTING OPTIONS

EXTENSIVE MATERIAL
OPTIONS

PRESSURE AND
TEMPERATURE RATED TO
3600PSI & 260C

Rapid Rates in Conductive Fluids

LPR monitoring provides an instantaneous measure of corrosion and is often used as a method for optimising corrosion inhibitor treatments. The technique is restricted to conductive solutions and the best results are obtained in highly conductive media. Data can be presented as an instantaneous corrosion rate in mils or millimetres per year.

LPR is most commonly used when fluctuating corrosion rates may be expected over relatively short intervals and where a method that averages rates over a longer period may not be sufficiently informative. For example: cooling water systems, chemical inhibition systems, wastewater treatment, oilfield water floods and chemical cleaning.

The method is not suitable for oily water or hydrocarbon applications and is subject to loss of circuit in scaling or filming environments. These can cause erroneous low corrosion rate indications. Some electrochemical expertise may be necessary to obtain best performance.

The probes can be directly measured using the Axess Hand Held Unit (HHU also functions with ER and Galvanic probes), or it can be connected to a data collection unit (DCU) and set to measure at intervals down to 1 minute. Analogue and digital communication and power options are also available, as well as wireless and cellular. Hazardous area rated instruments are standard and our probes also function with other manufacturers instrumentation.

Sample Part Number: LPR2HP-6.50

Model High Pressure, 2 Element LPR	Order Length 6.50"
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Replacement Electrodes

Electrodes are available in many varieties and we have listed the most common options.

Size: 0.188" diameter
1.203" long, flat end

0.245" diameter
1.725" long, flat end

0.188" diameter
1.25" long, full radius tip

Materials: Carbon Steel C1018
Aluminum 6082
Copper C101 (C11000)
Stainless Steel 304L
Stainless Steel 316L
Plus many more.

Washers: Viton washers included

Packing: Sets of two or three electrodes.
Each electrode is packed in a VCI Envelope and sealed with the Viton washers in a heavy-duty Polythene bag.



www.axess-corrosion.com

Contact an Axess Expert for Further Information